

REMARKS

In the Official Action mailed 02 January 2008, the Examiner reviewed claims 146, 148, 174-179 and 189-196. The Examiner has rejected claim 146 under 35 U.S.C. §112, second paragraph; and has rejected claims 146, 148, 174-179 and 189-196 under 35 U.S.C. §103(a).

Applicant has amended claims 146 and 174. Claims 146, 148, 174-179 and 189-196 remain pending.

Each rejection is respectfully traversed below.

Rejection of Claim 146 under 35 U.S.C. §112, second paragraph

The Examiner has rejected claim 146 under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Applicant has amended claim 146 to address the concerns raised, clarifying that the interactive process includes producing sounds using the audio transducer on the headset and communication with a remote device having a user interface by which the user inputs data during the interactive process. These clarifying amendments are supported in the specification as filed at page 23, lines 13-16 and 19-21, and Figure 23.

Claim 174 is also amended to clarify that the audio transducer on the headset is used to produce sounds during the interactive process.

Accordingly, reconsideration of the rejection of claim 146 as amended is respectfully requested.

Rejection of Claims 146, 148, 174-179 and 189-196 under 35 U.S.C. §103(a)

The Examiner has rejected claims 146, 148, 174-179 and 189-196 under 35 U.S.C. §103(a) as being unpatentable over Berger (US 6,684,063) in view of Campbell *et al.* (US 6,212,496). Reconsideration is requested in light of the clarifying amendments to independent claims 146 and 174 discussed above.

The present invention is a completely new device which would not be obvious to a person of skill from the combination of components selected from Berger and Campbell *et al.* In particular, a headset is provided that both supports an interactive process using audio transducers on the headset create a hearing profile, and provides resources to apply the hearing profile to audio channels being played using the headset. This enables the creation of hearing profiles that

are specifically adapted for the headset without the difficulty and expense of obtaining a hearing aid “prescription”, and the provision of audio data adjusted using a hearing profile on the headset independent of the source of audio data. Because there is no prescription required, the technology is made available to a large number of people who could benefit from the audio processing using a hearing profile, but who do not have sufficient hearing impairment to induce them to obtain a hearing aid or hearing aid prescription. Also, the hearing profile provided will be usable with a variety of sources of audio data after the creation of the hearing profile, so long as the sources of audio data are able to communicate with the headset on its audio channel.

Berger describes the integration of the hearing aid with a wireless telephone, and other devices including a wireless headset. According to Berger, a user’s prescription is programmed into the processor on the wireless telephone (or other device). Berger relies upon “prescriptions” rather than interactively produced hearing profiles that, as required by the present claims, are provided using the audio transducer on the headset. The manner in which the prescriptions used in Berger are created is not described. However, the ordinary meaning of the term “prescription” suggests that it is provided by audiologists or other medical professionals. For this reason, Berger actually teaches away from the present invention.

The Office Action takes the position that Berger describes "an interactive process with a user interface involving a switch", citing column 3, lines 31-33. The switch described in this passage of Berger is used in a case in which the wireless telephone stores multiple prescriptions, such as different prescriptions for the left and right ears on a single person, or different prescriptions for multiple users. Therefore, in order to use the device the user must select the appropriate prescription. There is no technique described in Berger for creating a prescription. There is no interactive process as required in claims 146 and 174, using audio transducers on a headset to produce sounds during the interactive process, and communicating with an external device that provides the user interface for the interactive process described in Berger.

In order to provide a truly usable headset that can be adapted to a user’s hearing profile and used with a variety of audio sources, the present inventors have created a system in which a hearing profile is easily provided and is specifically adapted to the headset. The reliance by Berger on “prescriptions” suggests that he was not even aware of the issues involved.

The Office Action takes the position that Campbell *et al.* teaches the interactive process for providing the hearing profile. Campbell *et al.* does describe the execution of a hearing test

using a digital telephone. However, it does not describe an interactive process that produces sounds using an audio transducer on a headset, and communication with a user interface on a remote device. Rather, in Campbell, the user interface and the audio transducers are on a single device.

The Office Action takes the position that Campbell *et al.* "discloses that the hearing test signals can be either provided by the cellular phone (column 5, lines 52-64) or by signal received from a source external to the cellular phone (column 6, lines 49-52)." Applicant respectfully disagrees. The citation at column 6, lines 49-52 reads "the signal received by the telephone can be a digital signal supplied over a digital network." In this passage, the "signal" being referred to in this cited passage is the telephone signal received from a digital telephone network, rather than part of an interactive process to provide a hearing profile. Applicant believes that this is unambiguously true if the passage is read in context. For example, at column 6, lines 32-36, Campbell *et al.* refers to an alternative in which the telephone receives an analog signal on an analog telephone network, which is then converted to digital form for processing. Therefore, applicant submits that the passage cited in the Office Action does not relate to communication during an interactive process to provide a hearing profile.

In fact, Campbell *et al.* teaches that in a system in which the user has a hearing aid, apart from the cellular phone, "the cellular phone transmits the adjusted signal to the hearing aid which in turn plays the audio signal to its own speaker." (Campbell *et al.* a the will to, column 6 lines 41-43). This suggests that the hearing profile is produced using a cellular phone, and the audio data is processed on the cellular phone before it is transmitted to the hearing aid. This is directly contrary to the claims herein, where the headset includes the processor that plays audio during an interactive process used to establish the hearing profile, and that also processes the audio using the hearing profile.

The present invention therefore provides a completely new kind of device. The headset claimed herein can be used with any source of audio data able to communicate with it on an audio channel, and apply the hearing profile of the user adapted specifically for the headset because of the use of the audio transducer on the headset during the interactive process to provide the hearing profile. There is no similar device suggested by the prior art.

Claim 148 depends from claim 146 and is allowable for at least the same reasons, and because of the unique combination recited. For example, claim 148 requires further that the

audio transducer used by the interactive process comprises stereo speakers. No similar technique is described in Berger. As mentioned above, the hearing profile used in Berger is a prescription programmed into the phone. The headset mentioned in Berger in the citation relied upon in the Office Action in connection with claim 148 (column 6, lines 25-27) is not utilized in the creation of a hearing profile.

Likewise, claims 189, 191 and 192 depend from claim 146, and are allowable for at least the same reasons, and because of the unique combinations recited.

For example, as to claim 191, Berger does not suggest that the hearing profile can be modified using an interactive process that uses the audio transducer on the headset. The ability to modify a hearing profile as recited is a unique feature of the headset claimed herein, allowing a user to adapt the hearing profile over time, based on real in-the-field experience. No prescription-based system as suggested by Berger would be capable of providing such service. As taught by the present invention, a user is able to both establish and optimize the profile for use in the headset. The Office Action cites column 3, lines 20-38 of Berger in connection with claims 191 and 195. This passage in Berger describes techniques for programming a prescription or multiple prescriptions onto a cellular phone. The "interaction" described in this passage involves only using a switch to select among multiple prescriptions. It is not utilized for modifying a hearing profile. Therefore, the reliance on this passage in Berger as a basis for suggesting claims 191 and 195 is believed to be mistaken.

Claims 175, 178, 179, 193, 195 and 196 depend from claim 174, and are allowable for at least the same reasons, and because of the unique combinations recited.

Claim 195 for example, requires "supporting an interactive process to modify the hearing profile," which is not taught by any reference of record, as mentioned above in connection with claim 191.

Accordingly, reconsideration of the rejection of claims 146, 148, 174-179 and 189-196 as amended is respectfully requested.

CONCLUSION

It is respectfully submitted that this application is now in condition for allowance, and such action is requested.

The Commissioner is hereby authorized to charge any fee determined to be due in connection with this communication, or credit any overpayment, to our Deposit Account No. 50-0869 (RXSD 1001-3).

Respectfully submitted,

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/Mark A. Haynes/

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